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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,391	07/17/2001	Shumpei Kameyama	0054-0237P	3793
2292	7590	11/02/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			MANCHO, RONNIE M	
PO BOX 747			ART UNIT	PAPER NUMBER
FALLS CHURCH, VA 22040-0747			3663	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/889,391	KAMEYAMA ET AL.	
Examiner	Art Unit		
Ronnie Mancho	3663		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 January 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2 and 4-41 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 22-27 and 30-41 is/are allowed.

6) Claim(s) 1,2,4-21,28 and 29 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 7 has been amended to include the *new matter* “to remotely control the operation of said flying object”

The limitation, “to remotely control the operation of said flying object” or that the ground station is remotely controlling the aircraft was not found in applicant’s specification. The addition of the word, “remotely” constitutes *new matter*. Nowhere in the specification is disclosed the feature of remotely controlling an aircraft by a base station as claimed. In applicant’s specification, the last paragraph bridging pages 14 and 15 indicates a base station 3 that transmits a control signal to a pilot of a flying object 2 to control the flying object.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 9, 28 and 29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 8, 9, 28 and 29, the applicant is claiming said system of independent claim 22 provided on a plurality of stars. But the navigation system of claim 22 is not provided on a plurality of stars as claimed. Instead it is a base station for intercommunicating with flying

objects that is provided on stars. The navigation system of independent claim 22 comprises: meteorological observation means; flying objects; flying object interconnection means provided in said flying object means. These limitations that make up the “navigation system” are not provided on stars in applicants disclosure.

The applicant is also advised to correct the amended phrase “provided in said flying objects *means*” to read --means provided in said flying object-- for clarity.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1, 2, 4-7, 10-16, 19, 20 rejected under 35 U.S.C. 102(e) as being anticipated by Zheng et al (6184816).

Regarding claim 1, Zheng et al disclose a flying object navigation system comprising: a base station (ground station, col. 6, lines 13+; fig. 4A; col. 16, lines 30+) capable of storing information (database, col. 7, lines 55+) provided as common information for navigation of at least one flying object (aircraft) existing as a navigation object, said base station (ground station, col. 6, lines 13+) transmitting (fig. 4A; col. 16, lines 30+) to said flying object (aircraft) necessary data from said stored information for determining a course of action to be taken by

said flying object (aircraft) on the basis of observation data from meteorological observation means 61 (fig. 4A; col. 16, lines 30-55) for observing the meteorology of a space region in which said flying object (aircraft) is flying, said base station transmitting said necessary data by using communication means (58, fig. 4A; col. 16, lines 30+) connected to said flying object (aircraft), wherein said base station (ground station) has a memory (database, col. 7, lines 24-34, lines 55-67) for storing data sets comprising:

all observation data obtained in the past through observation by said meteorological observation means 61 (fig. 4A; col. 16, lines 30-55);

records of courses of action (altitude of aircraft relative to hazardous weather, col. 17, lines 17-27; acceleration in relation to aircraft position, navigation data, other flight data, etc; col. 16, lines 3-55; col. 15, lines 57-67) taken by said flying object on the basis of the observation data; and

records of events (turbulence, winds, temperature, etc; col. 16, lines 3-55) encountered by said flying object as a result of the records of the courses of action (altitude, acceleration, navigation data, other flight data, etc; col. 16, lines 3-55; col. 15, lines 57-67);

wherein the course of action (flight path or position of aircraft) taken by said flying object is determined based on a prediction result (potential turbulence, etc; see Zheng, claim 1; abstract), the prediction result being based on the observation data obtained, the records of courses of action taken (altitude or flight path of aircraft taken relative to wind, temperature, hazardous weather; figs. 2G, 4A, 4C-F; col. 13, lines 6-34; col. 14, lines 1-5; 3-46; col. 17, lines 17-27) by prior flying objects (In fig. 4A, stored weather products, which include flight path i.e. courses of action taken by an aircraft relative to events encountered, are exchanged between

different aircrafts through a base station) encountering the same observation data, and records of events encountered (winds, temperature, etc; col. 16, lines 3-55), which are stored as data sets in the memory of the base station.

Regarding claim 2, Zheng et al disclose the flying object navigation system according to claim 1, further comprising:

 said flying object (aircraft, fig. 4A) having said meteorological observation means 10 (col. 16, lines 30+; col. 9, lines 63+), further includes;

 transmitting means 58 (fig. 4A) for transmitting, to said base station, observation data obtained through observation by said meteorological observation means (col. 16, lines 3-55; col. 15, lines 57-67); and

 receiving means 58 (fig. 4A) for receiving necessary data for determining a course of action to be taken, the necessary data being transmitted from said base station (ground station, fig. 4A; col. 16, lines 30+; col. 6, lines 13+) by using said communication means 58.

Regarding claim 4, Zheng et al disclose the flying object navigation system according to claim 1, wherein said base station (ground station) includes a data base (database, col. 7, lines 55+) which is constructed on the basis of the contents of said data sets stored in said memory and wherein observation data obtained through observation by said meteorological observation means 10, a course of action taken by said flying object after meteorological observation, and an event encountered by said flying object as a result of taking the course of action are related to each other (cols. 6-9, and 16).

Regarding claim 5, Zheng et al disclose the flying object navigation system according to claim 4, wherein said base station (ground station) comprises:

a receiving section for receiving, through said communication means 58 (col. 16, lines 30+), observation data obtained through observation by said meteorological observation means 10;

a prediction section for predicting (forecasting, col. 6, lines 57+) the relationship between a course of action taken by said flying object and an event (CAT, col. 6, lines 13+) encountered by said flying object (aircraft) as a result of taking the course of action by making a search to ascertain which case in said data base (database, col. 7, lines 55+) the received observation data corresponds to (convective super cells, TNT, MWT, etc); and

a transmitting section (fig. 4A, col. 16, lines 30+) for transmitting a prediction result obtained by said prediction section (forecasting, col. 6, lines 57+) to said flying object (aircraft) through said communication means 58 (col. 16, lines 30+).

Regarding claim 6, Zheng et al disclose the flying object navigation system according to claim 5, wherein said base station (ground station) has a function of successively storing (database, col. 7, lines 55+), when data sets are newly formed, the new data sets on said memory, and a function of reconstructing (information updates, col. 8, line 7) said data base from the older data sets and the new data sets successively stored.

Regarding claim 7 (as best understood), Zheng et al disclose a flying object navigation system comprising:

a base station (ground station, col. 6, lines 13+; fig. 4A; col. 16, lines 30+) capable of storing information (database, col. 7, lines 55+) provided as common information for navigation of at least one flying object (aircraft) existing as a navigation object, said base station (ground station, col. 6, lines 13+) transmitting (fig. 4A; col. 16, lines 30+) to said flying object (aircraft) necessary data from said stored information for determining a course of action (altitude or flight path of aircraft taken relative to wind, temperature, hazardous weather; figs. 2G, 4A, 4C-F; col. 13, lines 6-34; col. 14, lines 1-5; 3-46; col. 17, lines 17-27) to be taken by said flying object (aircraft) on the basis of observation data from meteorological observation means 61 (fig. 4A; col. 16, lines 30-55) for observing the meteorology of a space region in which said flying object (aircraft) is flying, said base station transmitting said necessary data by using communication means (58, fig. 4A; col. 16, lines 30+) connected to said flying object (aircraft),

wherein said base station (ground station) transmits a signal for operating said flying object to control the operation of said flying object (col. 16, lines 30-45) based on the determined course of action (flight path of aircraft relative to weather conditions).

Regarding claim 10, Zheng et al disclose the flying object navigation system according to claim 1, wherein a plurality of base stations (ground stations 60, 61, fig. 4A; col. 16, lines 41+; also see col. 7, line 5) are provided on one star (i.e. earth. See specification page 7).

Regarding claim 11, Zheng et al disclose the flying object navigation system according to claim 10, wherein the plurality of said base stations (ground stations 60, 61, fig. 4A; col. 16, lines 41+; also see col. 7, line 5) provided on the one star (earth) are connected to each other through base station interconnection communication means (col. 16, lines 41+; fig. 4A), and that,

every time a data base is reconstructed, data sets in the data base are transmitted between said base stations (ground stations 60, 61, fig. 4A; col. 16, lines 41+).

Regarding claim 12, Zheng et al disclose the flying object navigation system according to claim 1, wherein each of said base station and said flying object has an antenna, and each of said communication means and said base station interconnection communication means performs wireless communication (col. 8, lines 1+).

Regarding claim 13, Zheng et al disclose the flying object navigation system according to claim 1, wherein said flying object is an airplane.

Regarding claim 14, Zheng et al disclose the flying object navigation system according to claim 1, wherein said meteorological observation means 10 comprises an air turbulence observation apparatus (col. 9, lines 62+).

Regarding claim 15, Zheng et al disclose the flying object navigation system according to claim 1, wherein an event encountered by said flying object includes changes in wind velocity with time in vertical and/or horizontal directions acting on said flying object (CAT).

Regarding claim 16, Zheng et al inherently disclose the flying object navigation system according to claim 12, wherein said communication means for performing wireless communication uses light waves (i.e. one of high skill in the art knows that any wireless communication means, including light, available nowadays could be used; col. 8, lines 1-7).

Regarding claim 19, Zheng et al disclose the flying object navigation system according to claim 14, wherein said air turbulence detector comprises a laser radar air turbulence detector.

Regarding claim 20, Zheng et al disclose the flying object navigation system according to claim 19, wherein said laser radar air turbulence detector has functions of transmitting laser light, receiving, as a received signal, scattered light caused by scattering of the laser light in the air, and observing the wind velocity from the Doppler effect in the received signal (col. 7, lines 2+; col. 11, lines 18+).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zheng et al (6184816) in view of Small et al (5093563).

Regarding claim 17, Zheng et al disclose the flying object navigation system according to claim 12, wherein a plurality of said base stations (ground stations, col. 7, lines 5+) are provided on one star (i.e. earth, see specification, page 7, last paragraph), but did not mention an interconnection cable. However, Small et al (5093563) teaches of base stations connected by a base station interconnection cable 64 (fig. 3; col. 4, lines 60+; col. 12, lines 54+). Therefore, it would have been obvious to one of ordinary skill in the art of optically detecting turbulence to modify the Zheng et al device as taught by small et al for the purpose of recording more information than conventionally known, Small et al (col. 4, lines 50+).

Regarding claim 18, Small et al disclose the flying object navigation system according to claim 17, wherein said base station interconnection cable is formed of an optical fiber cable.

8. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zheng et al (6184816) in view of De Groot et al (6327039).

Regarding claim 21, Zheng et al (col. 7, lines 1+) disclose the flying object navigation system according to claim 19, characterized with a laser radar air turbulence detector. On the other hand, Zheng did not disclose how the laser radar works. However, De Groot et al teaches of a laser radar air turbulence detector characterized in that said laser radar air turbulence detector has functions of transmitting laser light, receiving, as a received signal, scattered light caused by scattering of the laser light in the air (col. 3, lines 55 to col. 4, lines 1+), and observing the density of air (abstract; col. 6, lines 56 through col. 7, lines 1-14) from the intensity of the received signal. Therefore, it would have been obvious to one of ordinary skill in the art of meteorology to modify the Zheng et al device as taught by De Groot et al for the purpose of compensating for errors related to refractive index measurement brought about by turbulence, De Groot et al, abstract.

Allowable Subject Matter

9. Claims 22-27, 30-41 allowed.

10. The following is an examiner's statement of reasons for allowance:

In independent claim 22, the prior art does not disclose “flying object interconnection means provided in said flying object means for interconnecting directly with a plurality of flying object”.

In claim independent 38 and 40, the prior art does not disclose, “observation data is received by said database terminal directly from a plurality of flying objects”. Claims 39 and 41 are allowed for depending on allowed base claim.

11. Claims 8, 9, 28, 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

In claims 8, 9, the prior art does not disclose base stations provided on different stars.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Response to Arguments

13. Applicant's arguments filed 1-29-04 have been fully considered but they are not all persuasive.

In response to the arguments with reference to claims 1, Zheng et al disclose records of courses of action taken by prior flying objects (altitude or flight path of aircraft taken relative to

wind, temperature, hazardous weather; figs. 2G, 4A, 4C-F; col. 13, lines 6-34; col. 14, lines 1-5; 3-46; col. 17, lines 17-27) encountering the same observational data. In fig. 4A Zheng teaches of the exchange of information between aircrafts through a ground station. The information of the flight path (course of action) taken by a first aircraft relative to weather conditions (events encountered) are stored in the ground station and also transmitted to other aircraft.

In amended claim 7, the applicant argues about the limitation “to remotely control the operation of said flying object” or that the ground station is remotely controlling the aircraft. The addition of the word, “remotely” constitutes new matter. Nowhere in the specification is disclosed the feature of remotely controlling an aircraft by a base station as claimed. In applicant’s specification, the last paragraph bridging pages 14 and 15 indicates a base station 3 that transmits a control signal to a pilot of a flying object 2 to control the flying object.

Furthermore, in claim 7, Zheng et al (col. 16, lines 53-55) disclose transmitting signals to and from the aircraft to control the operation of the aircraft. As a matter of fact, when CAT is predicted from the weather data observed, the aircraft operation is provided so as to avoid areas of CAT (col. 6, lines 13-26). Without such data transmitted from the base station, the pilot cannot effectively control the flying object to avoid some potential dangerous hazards. Zheng in anticipation of these hazards uplinks the above mentioned signals to the aircraft to control operation of the aircraft.

Therefore, Zheng et al anticipates the claim (as best understood) with out the new matter. The arguments with respect to the other claims have been addressed in the last office action and there is therefore no need to repeat the arguments here.

The examiner has carefully pointed the sections in Zheng where the actual limitations in the claims are found and it would be needless to repeat them here.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 703-305-6318. The examiner can normally be reached on Mon-Thurs: 9-5.

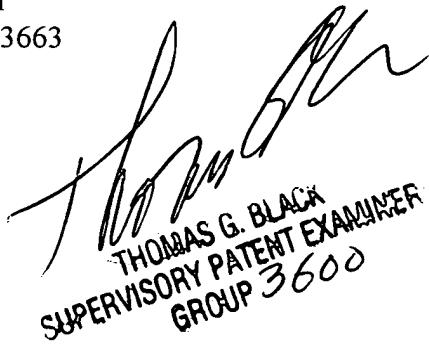
Art Unit: 3663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ⁵ Tom Black can be reached on 703-308-8233. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Ronnie Mancho
Examiner
Art Unit 3663

October 28, 2004



THOMAS G. BLACK
SUPERVISORY PATENT EXAMINER
GROUP 3600